

Abstract

Method and Composition for Nutritional
Supplementation During Exercise and Recovery

5 A supplement containing lactic acid salts and/or
polymers, and optionally simple and/or complex
carbohydrates, is employed to promote energy supply,
fluid and electrolyte balance, blood glucose
homeostasis, blood pH buffering and muscle as well as
liver glycogen storage during and after strenuous
10 exercise. The disclosed composition takes advantage of
the presence of sodium-mediated intestinal lactate and
glucose transporters, intestinal conversion of glucose
to lactate, hepatic formation of glycogen from lactate,
the preferential uptake of lactate for fuel by cardiac
15 and red skeletal muscles, the alkalizing effect of the
combustion of lactate to CO_2 and H_2O and conversion to
glucose of glycogen, and the presence of a sarcolemmal
(muscle cell membrane) lactate/hydrogen ion (symport)
transport protein to provide beneficial nutritional
20 supplementation during exercise and subsequent
recovery.